Claims

1. A conductive polymer matrix comprising a molecule having binding specificity for a target molecule.

2. The conductive polymer matrix according to claim 1, wherein said molecule having binding specificity for a target molecule is an antibody, or an antigen binding fragment thereof.

3. The conductive polymer matrix according to claim 2, wherein said antibody is a monoclonal antibody.

4. The conductive polymer matrix according to claim 2, wherein said antibody binds to a CD34 determinant.

5. The conductive polymer matrix according to claim 1, wherein said molecule having binding specificity for a target molecule is selected from the group consisting of Fc receptor, Protein G, and avidin or avidin-related molecules.

6. A method for isolating a target molecule from a sample, said method comprising contacting said sample with a conductive polymer matrix, wherein said conductive polymer matrix comprises a molecule having binding specificity for a target molecule; binding of said target molecule to said molecule having binding specificity for said target molecule; and releasing said molecule having binding specificity for said target molecule from said conductive polymer matrix.

7. A method for isolating a target cell from a sample comprising a mixture of cells, said method comprising contacting said mixture of cells with a conductive polymer matrix,

wherein said conductive polymer matrix comprises a molecule having binding specificity for a target molecule expressed on said target cell; binding of said target cell to said molecule having binding specificity for said target cell; and releasing said molecule having binding specificity for said target molecule from said conductive polymer matrix.

8. The method according to claim 7, wherein said method further comprises washing said polymer matrix to remove unbound material.

9. The method according to claim 7, wherein said conductive polymer matrix comprises an antibody.

10. The method according to claim 9, wherein said antibody is a monoclonal antibody.

11. The method according to claim 9, wherein said antibody binds to a CD34 determinant.

12. The method according to claim 7, wherein said target cell is a stem cell.

13. The method according to claim 7, wherein said conductive polymer matrix is formed using enzyme generated means.